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Mr. Charles Jackson, Jr. said that actual experiments by the thermometer have proved that 360° of heat are saved by the regenerator, there being only 30° difference between the temperature of the air going out and that going in.

Professor Gray alluded to a very interesting botanical discovery in this country, namely, the finding of two species of *Trichomanes* in the northwest corner of Alabama; species of a group of ferns, of very delicate texture, usually confined to very moist parts of the tropics, or to islands having a damp climate and equable temperature, but not before known to occur within the limits of the United States.

The small species of *Trichomanes* exhibited by Dr. Gray is doubtless a new species, which he proposes to name *T. Petersii*, in honor of the discoverer, T. M. Peters, Esq. The other is the *Trichomanes radicans*, found in the southwestern parts of Ireland, and also widely scattered in the tropics. Dr. Gray mentioned that the latter is very frequently cultivated in the glazed cases invented by Mr. Ward; without such treatment it is incapable of cultivation.

The wide range of the ferns having been alluded to, a discussion arose on the difficult question of specific characters. Many supposed identical species of animals have been found, on close examination and actual comparison, to be different; and it was questioned whether the same may not be true of the cosmopolite ferns.

Three hundred and seventy-seventh meeting.

April 5, 1853. — MONTHLY MEETING.

The PRESIDENT in the chair.

Professor Horsford made some remarks explanatory of a part of the fourteenth chapter of Leviticus, in which are described the signs and treatment of "leprosy" in a house.

He alluded to the decomposition of sulphate of iron when subjected to decomposing animal matter, and its change into the sulphuret or iron pyrites. This last oxidates readily, and

is one cause of the stains and some other injuries often seen in stones used for building purposes. He mentioned several buildings which had thus been disfigured, and remarked that the Washington Monument would, in course of time, be defaced from this cause.

The leprosy is described as being "in the walls of the house, with hollow streaks, greenish or reddish, which in sight are lower than the wall." And the remedy is given, — the removal of the affected stones, their replacement by others, and the scraping and plastering of the house.

He thought that the "leprosy of the house" alluded to, was caused by the decomposition of this salt of iron; the greenish color being due to the presence of the sulphate, and the reddish to the peroxide of iron. The limestone used for building in that locality he had found to contain iron pyrites.

He also alluded to a leprosy in clothing, arising from a spontaneous change in the improperly cleansed wool from which they were made.

Dr. Bigelow, after alluding to a supposed connection between leprosy and this change in the walls of a house, observed that the cause of epidemics is completely unknown, and that the reference of them to specific causes has always been in proportion to the ignorance of the people.

Professor Jeffries Wyman made a verbal communication on the effects of physical agents on the development of life. He had repeated some of the experiments of Milne-Edwards on the influence of a low temperature and the absence of light on the development of frogs.

The tadpoles experimented upon were those of the common bull-frog (*Rana pipiens*, *Linn.*). These, under ordinary circumstances, are hatched in the spring, and acquire their full growth during the autumn, when a few undergo their metamorphosis; but in the larger number, this does not take place till the following spring, the tadpole period lasting about one year.

On the 8th of November, 1851, about thirty tadpoles con-

tained in a trough holding about a barrel of water were introduced into a dark closet in a cellar; the water was occasionally changed, and they were well supplied with food, consisting of *Confervæ*, leaves, grass, and some animal matter. The thermometer in the closet ranged from 33° to about 60° F. They measured, at the time of introduction, between three and four inches in length; as they were probably hatched in the spring, they were therefore about six months old.

During the month of September, 1852, (ten months after they were introduced into the cellar,) a few were removed to another trough, which, though under cover, was exposed to the ordinary light, and the temperature of the air; these tadpoles soon exhibited signs of metamorphosis; their legs were developed and their tails absorbed.

The remainder have now been seventeen months in the cellar, and if (as there can be little doubt) they were hatched in the spring of 1851, they are now (April, 1853) at least nearly two years old. In the mean time they have not materially changed in size; the legs, which were mere rudiments when they were introduced, have not increased; and as far as appears, the tadpoles have no tendency to metamorphosis.

Assuming the natural larva period to be one year (and this corresponds with observation), that period has in this experiment been extended to nearly double its usual duration.

It was noticed, that when the thermometer was at its greatest depression, the tadpoles exhibited a much greater degree of activity than fully developed frogs, exposed in the same closet to the same degrees of light and heat. The tadpoles were frequently moving about, when the frogs were wholly torpid.

Three hundred and seventy-eighth meeting.

May 3, 1853. — MONTHLY MEETING.

The VICE-PRESIDENT in the chair.

The Corresponding Secretary read a letter from Lieutenant J. M. Gilliss, of the United States Navy, presenting, from the